REMARKS

Claims 1, 3, 4, 6-8, 10-15, and 24 are currently pending and stand rejected. More particularly, claims 1, 3, 7, 8, 11, and 15 were rejected as being anticipated by Schwesig (USP 6,573,681). Claims 4, 6, and 13-14 were rejected as being unpatentable over Schwesig in view of Rowlette (USP 5,806,440). Claim 10 was rejected as being unpatentable over Schwesig in view of Sato (USP 6,775,115). Claim 12 stands rejected as being unpatentable over Schwesig in view of Wilson (USP 5,764,024). Claim 24 was rejected as being unpatentable over Schwesig in view of DeDecker et al. (USP 5,904,666).

Applicant appreciates the Examiner's consideration of the Amendment presented with the Request for Continued Examination filed January 26, 2007. Similarly, Applicant appreciates the Examiner's time and efforts in the telephone interview conducted on June 27, 2007.

Each of the independent claims, claim 1, as amended herein, and claim 24, as previously presented, call for a safety relay that is electrically isolated or electrically independent of a logic circuit, such as a microprocessor. The Examiner has asserted that Schwesig in combination with DeDecker et al. renders such a safety relay, together with the other recited limitations, unpatentable. Applicant respectfully disagrees and therefore requests consideration of the traversal remarks presented hereafter.

It is well established that a prima facie case of obviousness cannot be established if the references themselves, or a general understanding of the art, do not provide a motivation or suggestion to arrive at the claimed invention. See MPEP §2143.01. In other words, a prima facie case of obviousness cannot be made if the references teach away from the combination or if the combination would render the prior art invention unsatisfactory for its intended purpose.

Regarding the subject matter of a safety relay being electrically isolated or independent of a low logic circuit, the Examiner has asserted that one skilled in the art would have found such subject matter obvious given the disclosures of Schwesig and DeDecker et al. Specifically, the Examiner has asserted that Schwesig discloses all of the

structural limitations, but "is silent regarding the safety circuit being electrically independent of the logic circuit." Office Action, pg. 7. As such, the Examiner has asserted that it would have been obvious to electrically isolate the safety relay or safety circuit from the logic circuit, e.g., microprocessor, because "DeDecker teaches a safety circuit electrically independent ... of a logic circuit." Id. Notwithstanding the disclosure of DeDecker, Schwesig explicitly teaches away from such electrical isolation.

Schwesig discloses, as illustrated in FIG. 1, a drive control for a three-phase AC motor that "has two systems I1 and I2, via which the inverter W, and thus the three-phase AC motor M are operated." (3:58-60). In addition to driving the AC motor, the drive control also provides "safe stopping" by "turning off ... the inverter W operationally or in the event of a fault." (4:10-12). Schwesig teaches that this "safe stopping" is achieved "by interrupting the supply voltage SV1, derived from an external voltage SV, for the optocouplers OK1, OK3 and OK5 for the upper bridge arm of power transistors via a switch S1 (mechanical or else electronic in design) with the aid of the signal IL1 to the system I1..." (4:13-22).

A skilled artisan would recognize that Schwesig, contrary to the assertions of the Examiner, is not silent as to the relationship of the "safety circuit" relative to a logic circuit. In fact, Schwesig is explicit that the safety circuit is electrically connected to the logic circuit. That is, the logic circuit IL1 provides an electrical signal to switch S1. To provide this signal, the two components must be electrically connected to another. Thus, even assuming that DeDecker et al. teaches an electrically isolated safety circuit or relay, one skilled in the art, based on the disclosure of Schwesig itself, would not have been motivated to electrically isolate switch S1 from logic circuit IL1. Doing so would contradict an express teaching of Schwesig – that the logic circuit IL1 provide a command signal to the switch S1.

Moreover, one skilled in the art would recognize that incorporating the switch disclosed by DeDecker et al. into the circuit, which is microprocessor based, of Schwesig does not render the combined circuit more safe or reliable. A skilled artisan would appreciate that controlling the switch disclosed by DeDecker et al. with a microprocessor, as disclosed by Schwesig, does not alleviate the pitfalls of a microprocessor based

approach. Specifically, a microprocessor may consist of millions of transistors whose operation is governed by software. Not only may the transistors mechanically fail, but the software is also prone to error, which may cause the microprocessor to fail to provide the appropriate switching signal when a fault condition is detected. As such, safety circuits that rely upon microprocessors are inherently less reliable. The present invention overcomes this drawback by providing an electrically independent or isolated control of low power and is thus a non-obvious improvement over Schwesig when modified to incorporate the disclosure of DeDecker et al.

Therefore, based on the explicit teaching of the references, one skilled in the art would not have been motivated to combine the teachings of Schwesig and DeDecker et al. Accordingly, the Examiner has not established a prima facie case of obviousness. As such, Applicant requests withdrawal of the rejections and timely allowance of the application.

Any questions regarding this matter can be directed to the undersigned.

Respectfully submitted,
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